

20. A recording medium according to claim 8, wherein said edge shifting values are determined by combinations of a length $M(n)$ of a mark being currently written are at least one of a length $s(n-1)$ of a space precedent to the mark and a length $s(n+1)$ of a space subsequent to the mark, and which can be positive and negative.--

REMARKS

By the present amendment, the claims have been amended to define the feature storing of edge shifting values rather than information about edge shifting of at least one a leading and trailing edge of at least one recording pulse. Furthermore, a new dependent claim 20 has been added, which depends from claim 8, and define the determination of the edge shifting values in the manner as recited in claim 7.

The rejection of claims 7, 9-16 and 19 under 35 U.S.C. 103(a) as being unpatentable over Fuji (U.S. Patent 6,310,846) in view of Lee (U.S. Patent 5,241,524) and the rejection of claim 8 under 35 U.S.C. 103(a) as being unpatentable over Fuji (U.S. Patent 6,310,846) in view of Lee (U.S. Patent 5,241,524), such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or

suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Applicants note that in setting forth the rejections, the Examiner mischaracterizes the claim language of this application in terms of "non-functional" information, and contrary to this position by the Examiner, applicants submit that the look-up table as disclosed in the specification of this application, stores edge shifting values related to a leading edge or trailing edge of a recording pulse and applicants submit the recited features of independent claims 7 and 8 and the dependent claims are not disclosed or taught in the cited art.

Turning to Fuji, the Examiner recognizes with respect to claims 7, 9-16 and 19, that Fuji does not teach the lookup table includes a list of values about the

waveform data of a recording pulse. Furthermore, with respect to claim 8, the Examiner recognizes that Fuji does not teach that the look-up table stores information about edge shifting of a recording pulse. Applicants note that it is thus apparent that Fuji does not disclose or teach the recited features of claims 7 and 8 of "wherein said zone stores a lookup table having information about edge shifting values of at least one of a leading and trailing edge of at least one recording pulse". Likewise, it is apparent that Fuji does not disclose or teach the additional recited features concerning edge shifting values as recited in each of claims 7 and 8, irrespective of the Examiner's position that the information is considered as a "non-functional descriptive material" and it is obvious to store "any type of data" as desired. Applicants note that reference is made to the decision of In re Lee, supra, in relation to what is "well known" or the like.

Recognizing the deficiencies of Fuji, the Examiner cites Lee indicating that Lee teaches a lookup table which stores a list of pulse formation values, such as pulse widths, length and intervals (Fig. 6; column 7, lines 54-64). The Examiner refers to the data as non-functional descriptive material and contends that it is obvious to store any type of data and other comments, which do not relate to the claimed features of claims 7 and 8. Thus, applicants submit that the Examiner has engaged in a hindsight reconstruction attempt utilizing the principle of "obvious to try" which is not the standard of 35 U.S.C. 103. See In re Fine, supra.

Applicants submit that Lee discloses storing of a lookup table indicating a relationship between a channel bit and recording pulse data (col. 7, lines 53-58, Figs. 1, 3). The recording pulse data includes the number of pulses, pulse width and pulse interval (col. 7, lines 58-60, Figs. 1, 3). In accordance with Lee, the number of pulses, pulse width and pulse interval are determined by a mark length (such as L1, L2, L3 in Fig. 1B, col. 4, lines 51-52) to be recorded. The mark length L1 is formed by one pulse, L2 is formed by three pulses and L3 is formed by six pulses (Fig. 1C). Fig. 3 shows another case of using two pulse series depending on recording odd or

even numbered mark lengths. Here the mark length L1 and L2 are formed by one pulse, L3 and L4 are formed two pulses, and L5 and L6 are formed by three pulses, for an odd numbered mark is Tw1 and the pulse width for an even numbered mark is Tw2. Thus, while the lookup table of Lee has recording pulse data including the number of pulses, pulse width and pulse interval for each mark length, applicants submit that Lee, like Fuji et al, provides no disclosure or teaching of information of edge shifting values of at least one of a leading and trailing edge of at least one recording pulse as recited in claims 7 and 8. Moreover, with respect to the features of claim 7 that the edge shifting values are determined by "combinations of a length M(n) of a mark being currently written and at least one of a length s(n-1) of a space precedent to the mark and a length s(n+1) of a space subsequent to the mark, and which can be positive and negative", there is no disclosure or teaching of such features in Lee taken alone or in combination with Fuji et al in the sense of 35 U.S.C. 103, and claims 7 and 8 and the dependent claims patentably distinguish thereover.

Applicants note that in accordance with the present invention, the edge shifting values of lookup tables are read and adaptive waveform change is effected, whereby information can be recorded independently of fluctuations in recorded characteristics of the information storage apparatus with good stability and compatibility as described at page 29, line 23 to page 30, line 4 of the specification. Thus, contrary to the Examiner's position, the recited information regarding edge shifting values is functional rather than being non-functional descriptive material, and as pointed out above, neither Fuji et al nor Lee taken alone or any combination thereof disclose a lookup table storing information about edge shifting values of at least one of a leading and trailing edge of at least one recording pulse, as recited in both claims 7 and 8. Thus, applicants submit that each of independent claims 7 and 8 and the dependent claims patentably distinguish over this proposed combination of references in the sense of 35 U.S.C. 103.

With respect to claim 7, as pointed out above, neither Fuji et al nor Lee taken alone or in any combination thereof, provide for the determination of the edge shifting values in the manner defined and likewise, with respect to claim 8, neither Fuji et al nor Lee taken alone or in any combination thereof, disclose edge shifting values of at least one of the leading edge and trailing edge of at least one recording pulse are for recording a mark $3T_w$ long, where T_w is a time width. Thus, applicants submit that claims 7 and 8 patentably distinguish over the cited art and should be considered allowable thereover in the sense of 35 U.S.C. 103.

With respect to the dependent claims, applicants note that claims 9-16 and 19 which depend from claim 7, recite further features of the present invention and newly dependent claim 20 which depends from claim 8, recites features corresponding to that set forth in claim 7, which features are not disclosed or taught in the cited art when considered in conjunction with the parent claims. Thus, applicants submit that the dependent claims should also be considered allowable over the cited art in the sense of 35 U.S.C. 103.

In view of the above amendments and remarks, applicants submit that all claims present in this application patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (500.37445CX1) and please credit any excess fees to such deposit account.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 7-16 and 19 as follows:

7. (thrice amended) A recording medium comprising:

a disk-shaped substrate;

at least one track being provided on the disk-shaped substrate;

a zone including said at least one track therein;

wherein said zone stores a lookup table having information about edge shifting values of at least one of a leading and trailing edge of at least one recording pulse; and

wherein said ~~lookup table includes a list of~~ edge shifting values , which are determined by combinations of a length $M(n)$ of a mark being currently written and at least one of a length $s(n-1)$ of a space precedent to the mark and a length $s(n+1)$ of a space subsequent to the mark, and which can be positive and negative.

8. (thrice amended) A recording medium comprising:

a disk-shaped substrate;

at least one track being provided on the disk-shaped substrate;

a zone including said at least one track therein;

wherein said zone stores a lookup table having information about edge shifting values of at least one of a leading and trailing edge of at least one recording pulse; and

wherein said ~~lookup table includes information about edge shifting of at least one of a leading and trailing edge of~~ values are for at least one recording pulse for recording a mark $3T_w$ long, where T_w is a time width.

9. (twice amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for ~~of a leading~~ edge of a first recording pulse and a trailing edge of a last recording pulse of a plurality of recording pulses.

10. (twice amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for ~~of a leading~~ and trailing edge of a first recording pulse and a trailing edge of a last recording pulse of a plurality of recording pulses.

11. (twice amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for ~~of a leading~~ edge of a first recording pulse and a leading and trailing edge of a last recording pulse of a plurality of recording pulses.

12. (twice amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for ~~of a leading~~ and trailing edge of each of first and a last recording pulse of a plurality of recording pulses.

13. (twice amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for ~~of a leading~~ edge of a first recording pulse of a plurality of recording pulses.

14. (twice amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for ~~of a leading~~ and trailing edge of a first recording pulse of a plurality of recording pulses.

15. (twice amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for of a trailing edge of a last recording pulse of a plurality of recording pulses.

16. (twice amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for of a leading and trailing edge of a last recording pulse of a plurality of recording pulses.

19. (amended) A recording medium according to claim 7, wherein said ~~lookup table includes information about edge shifting~~ values are for of at least one of a leading and trailing edge of one recording pulse for recording a mark $3T_w$ long, where T_w is a time width.

Please add the following new claim:

--20. A recording medium according to claim 8, wherein said edge shifting values are determined by combinations of a length $M(n)$ of a mark being currently written are at least one of a length $s(n-1)$ of a space precedent to the mark and a length $s(n+1)$ of a space subsequent to the mark, and which can be positive and negative.--